

DRAFT
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Valley Regional Office

INTRA-AGENCY MEMORANDUM

4411 Early Road - P. O. Box 3000 Harrisonburg, VA 22801-3000

Permit Writer	Anita Riggleman	Date	12/14/05	
Air Permit Manager		Date		
Deputy Regional Director		Date		
Memo To	Air Permit File			
Facility Name	Transcontinental Gas Pipeline – Station 175			
Registration Number	40789			
County-Plant I.D.	065-0016			
UTM Coordinates (Zone 17)	726.8	Easting (km)	4190.8	Northing (km)
Elevation (feet)	500			
Distance to Nearest Class I Area (select one)	~40	SNP (km)		JRF (km)
FLM Notification Required (Y/N)	N			
AFS Classification (A, SM, B)	A	Before permit action	A	After permit action
Pollutants for Which the Source is Title V Major	NO _x , CO, VOC	Before permit action	NO _x , CO, VOC	After permit action
PSD Major Source (Y/N)	Y	Before permit action	Y	After permit action
Pollutants for Which the Source is PSD Major	NO _x , CO, VOC	Before permit action	NO _x , CO, VOC	After permit action

I. Introduction

Transcontinental Gas Pipeline (Transco) – Compressor Station 175 is owned by Williams Gas Pipeline. Transco is an interstate natural gas transmission company. Transco's 1,900-mile pipeline system transports natural gas from production areas in the Gulf Coast region to customers along the eastern seaboard. Transco's compressor stations are used to compress and move the gas along the system. Compression is made possible through the application of natural gas-fired, internal combustion, reciprocating compressor engines. The compressor station is located at 1344 Transco Road in Fluvanna County, Virginia. A Title V Operating permit was issued to Transco on 02/05/02. The Title V Operating permit expires on 02/05/07.

The NO_x SIP Call Rule (63 FR 57356, October 27, 1998 and 69 FR 21604, April 21, 2004), addresses the interstate transport of ozone. It requires twenty-one States and the District of Columbia to eliminate those amounts of NO_x emissions that contribute significantly to downwind nonattainment of the 1-hour ozone standard. EPA estimated the amount of NO_x emissions in a State by 2007 taking into consideration the effect of existing control measures and projected growth. This is known as the 2007 base year emissions inventory. EPA then applied highly cost-effective control measures to the 2007 base year emissions. This is known as the 2007 budget or controlled inventory. The amount of NO_x emissions that contribute significantly to nonattainment was determined to be the difference between the 2007 base year emissions inventory and the 2007 budget.

In the NO_x SIP Call Phase II Rule (69 FR 21604), the 2007 base year emissions inventory was recalculated to reflect partial State emission for Alabama, Georgia, Michigan, and Missouri and 82 percent control instead of 90 percent control for gas-fired lean burn engines in the stationary internal combustion (IC) engine source category.

Due to the administrative burden associated with the regulatory process and time constraints, Virginia DEQ decided to use an alternative approach to developing the legally enforceable mechanism to implement the EPA requirements for Phase II of the NO_x SIP call. Virginia DEQ will impose the emission limits and other requirements by permit instead of by regulation. This approach was chosen because only internal combustion (IC) engines need to be regulated as a part of the NO_x SIP call and there are only a few of those in the state.

On December 2, 2005, a Form 7 application was received from Williams Gas Pipeline for a State Operating Permit (SOP) for the four existing mainline natural gas-fired reciprocating engines located at Transco's Compressor Station 175. Transco seeks a federally-enforceable limit on this group of engines (as a whole) that will essentially cap NO_x emissions to an ozone season (May 01 – September 30) tonnage limit based on the budget set forth by the NO_x SIP Call Phase II.

Emissions calculations for the four affected engines at Transco's Compressor Station 175 are included in Attachment A. These calculations show the potential-to-emit of NO_x for

the 1995 ozone season, the projected NO_x emissions for the 2007 ozone season and the proposed emission limits.

II. Emission Unit(s) / Process Description(s)

The NO_x SIP Call Phase II permit application was received for the following affected units:

Unit Ref. No.	Equipment Manufacturer, Type and Model Number	Date of Installation	Maximum Rated Input Heat Capacity (MMBtu/hr)	Type of Fuel	Output Brake Horsepower (BHP)
M01	Cooper-Bessemer LSV-16SG four stroke spark-ignited lean burn (4SLB) reciprocating IC engine (RICE)	1960	37.0	Natural gas	4,400
M02	Cooper-Bessemer LSV-16SG 4SLB RICE	1960	37.0	Natural gas	4,400
M03	Cooper-Bessemer LSV-16SG 4SLB RICE	1960	37.0	Natural gas	4,400
M04	Cooper-Bessemer LSV-16SG 4SLB RICE	1960	37.0	Natural gas	4,400

III. Regulatory Review

A. 9 VAC 5 Chapter 80, Article 5 - State Operating Permit Review

Per 9 VAC 5-80-800 C.2.b, DEQ may issue a State Operating Permit to establish a source-specific emission standard or other requirement necessary to implement the federal Clean Air Act or the Virginia Air Pollution Control Law. Accordingly, the proposed State Operating Permit will be issued to establish NO_x SIP Call Phase II conditions.

B. 9 VAC 5 Chapter 80, Part II, Article 6 - Minor New Source Review

Transco is not proposing to construct or modify any emission unit. Therefore, minor new source review is not required.

C. 9 VAC 5 Chapter 80, Article 8 - PSD Major New Source Review

This facility is a PSD major source. Transco is not proposing to construct or

modify any emission unit. Therefore, major new source review is not required.

D. 9 VAC 5 Chapter 50, Part II, Article 5 - NSPS

No applicable NSPS standards apply to this facility.

E. 9 VAC 5 Chapter 60, Part II, Article 1 - NESHAPS

No applicable NESHAP standards apply to this facility.

F. 9 VAC 5 Chapter 60, Part II, Article 2 - MACT

The Reciprocating Internal Combustion Engines (RICE) MACT (40 CFR 63 Subpart ZZZZ), promulgated June 15, 2004, is not applicable to this facility. The compliance date for an existing source for Subpart ZZZZ is June 15, 2007. 40 CFR 63.6590(b)(3) states that a stationary RICE which is an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE does not have to meet the requirements of this subpart and the General Provisions (40 CFR Part 63, Subpart A) and no initial notification is necessary. The applicability of the RICE MACT may be addressed further during the upcoming Title V renewal process.

IV. Best Available Control Technology Review (BACT) (9 VAC 5-50-260)

A BACT review is not necessary. There are no new emissions units subject to minor new source review.

V. Summary of Controlled Emissions Increase

There are no increases in controlled emissions.

VI. Dispersion Modeling

A. Criteria Pollutants

There are no increases in criteria pollutant emissions. Therefore, no modeling is required.

B. Toxic Pollutants

There are no increases in toxic pollutant emissions. Therefore, no modeling is required.

VII. Boilerplate Deviations

The “NO_x Phase II SOP_DRAFT_FINAL.doc” was used to draft this SOP. The only deviation from the boilerplate was to add the following emission controls condition:

Requests to increase the total hours of operation of the affected facility above the limit contained in Condition III.D.1 or an increase in the emission limits contained in Condition III.D.2 will result in the requirement to install low emission combustion (LEC) technology on the existing affected units to ensure compliance with the ozone season NO_x tonnage limit.

VIII. Compliance Demonstration

The facility will ensure compliance with the permit through periodic monitoring as required in Condition III.C, testing as required in Condition III.E, and recordkeeping as required in Condition III.G of the permit. Over the last 5 years, the utilization of Transco’s Station 175 has been nearly zero during the ozone season. Records of hours of operation will satisfy periodic monitoring requirements for any affected unit operating less than 45 hours during the ozone season (less than 10% utilization). Emissions testing for NO_x is required for any affected unit that operates equal to or greater than 45 hours per ozone season. Initial emissions testing on all four units is required before May 1, 2007.

IX. Title V Review - 9 VAC 5 Chapter 80, Article 1

Transco is currently classified as a Title V major source and holds a Title V permit dated February 5, 2002. This will not change upon issuance of this permit.

X. Site Suitability

Not Applicable. There are no changes to the facility and no increases in emissions.

XI. Other Considerations

Load Shifting

EPA commented on the proposed compliance plan for Transco’s Station 175 and sought assurance that the plan does not produce a situation where Transco complies with the NO_x SIP Call Phase II reductions through load shifting. Transco’s response can be found in Attachment B. A summary of Transco’s rationale is as follows:

- Ozone season load shifting cannot occur at Station 175 as all four mainline compressor engines are “large” engines as defined by the NO_x SIP Call and are included in the proposed ozone season NO_x tonnage limit.
- Load shifting from Station 175 to other compressor facilities is not practicable as the hydrodynamics of pipeline operation require recompression at specific

points along the pipeline to overcome pressure losses created by pipeline friction and gas deliveries. Arbitrarily shutting in a station is not feasible or economic as pressure losses through that section of pipeline could create situations where pipeline pressures fall below serviceable levels.

- Station 175 historic operations demonstrate that the facility has not operated significantly during the last five consecutive ozone seasons. A review of ozone season operational data for Station 175 and adjacent compressor stations (Station 170 and Station 180) indicate utilization has fallen off during this period for all three facilities. Further, Station 175 utilization (approx. 10% for 1995 ozone season) trends along a similar curve as the adjacent stations (85% and 75% respectively) but at a significantly lower utilization rate. The spread in utilization rates is expected, as Station 175 was constructed as an intermediate facility to ensure that Transco could meet peak winter deliveries. Station 175's historic ozone season operations demonstrate that due to the peaking nature of its operation, load shifting does not occur.
- Transco seeks a permit that caps ozone season NO_x emissions from Station 175's mainline compressor engines to a tonnage limit based on the budget set forth by the NO_x SIP Call. Transco will continue to operate Station 175 at a utilization rate that would meet the ozone season NO_x tonnage limit. If required in the future, Transco is prepared to install LEC technology on these engines or replace these engines with lower emitting units to ensure compliance with the ozone season NO_x tonnage limit.

The DEQ and EPA agree with Transco's rationale which outlines how the NO_x SIP Call Phase II compliance plan for Station 175 does not involve load shifting to other units.

XII. Public Participation

Notice of the draft State Operating Permit inviting public comment was placed in the Daily Progress and Rural Virginian newspapers and a public hearing was held in accordance with the applicable provisions of 9 VAC 5-80-1020 and 9 VAC 5-170-100. The public notice period began January xx, 2006 and ended February xx, 2006. EPA was sent a copy of the draft permit and notified of the public notice on January xx, 2006.

Public comments were accepted from January xx, 2006 to February xx, 2006. The public hearing was held on February xx, 2006.

Copies of the documents used in development of the draft permit are available for review at the Valley Regional Office.

XIII. Recommendations

Recommend approval of the State Operating Permit.

XIV. Attachments

Attachment A: Emissions Calculations

Attachment B: Transco's Response on Load Shifting

ATTACHMENT A

ATTACHMENT B